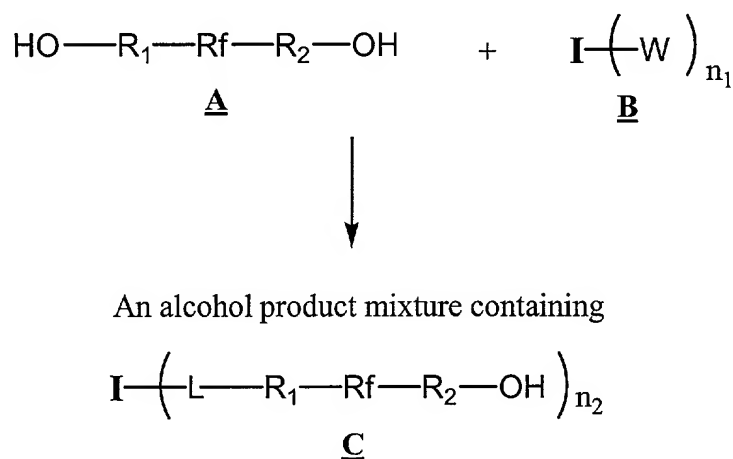


Claims

1. A fluorinated multifunctional alcohol synthesized from at least one core molecule having at least three equivalents of hydroxy-reacting functional groups and at least one fluorinated molecule having at least two hydroxyl groups.

2. The multifunctional alcohol of Claim 1 wherein there are at least 1.5 equivalents of hydroxyl groups from the fluorinated molecule for every hydroxy-reacting group from the core molecule.

3. The multifunctional alcohol of Claim 1 synthesized using the reaction scheme:



wherein **A** is a fluorinated monomer or polymer having two hydroxyl groups, wherein Rf is a monomeric or polymeric perfluorinated alkylenediyl, oxyalkylene, arylenediyl, oxyarylene, and mixtures thereof, and R₁ and R₂ are monomeric or polymeric divalent moieties such as alkylenediyl, oxyalkylene, alkylene sulfide, arylenediyl, oxyarylene, arylene sulfide, siloxane, and mixtures thereof; **B** is a multifunctional molecule wherein **I** is a core moiety, **W** stands for

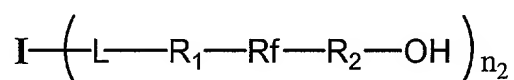
one equivalent of hydroxy-reacting group and n_1 is at least 3; **C** is the multifunctional alcohol product mixture from **A** and **B**, wherein L is an ether, ester or urethane link and n_2 is at least 3.

4. The multifunctional alcohol of Claim 3 wherein n_1 and n_2 range from 3 to 6.

5. The multifunctional alcohol of Claim 3 wherein there are at least 2.5 OH groups from **A** for every equivalent of hydroxy-reacting group, **W**, from **B**.

6. The multifunctional alcohol of Claim 3 wherein L is an ester link.

7. The multifunctional alcohol of Claim 3 having the formula of



wherein n_2 ranges from 3 to 6.

8. The multifunctional alcohol of Claim 3 wherein R_f is a perfluorinated polymethylene moiety having at least 4 carbon atoms.

9. The multifunctional alcohol of Claim 3 wherein R_f is a perfluorinated poly(oxyalkylene) moiety having at least 4 carbon atoms.

10. The multifunctional alcohol of Claim 3 wherein **B** is selected from a group consisting of multifunctional carboxylic acid, acid chloride, ester, and anhydride.

11. The multifunctional alcohol of Claim 3 wherein **B** is selected from 1,3,5-benzenetricarbonyl trichloride, trimethyl-1,3,5-benzenetricarboxylate and 1,2,4-benzenetricarboxylic acid.

12. The multifunctional alcohol of Claim 3 wherein **B** is selected from 1,2,3,4-butanetetracarboxylic acid and tetraethyltrimethyl-1,1,2,2-ethanetetracarboxylate.

13. A multifunctional acrylate prepared from the fluorinated multifunctional alcohol of Claim 1.

14. A multifunctional acrylate prepared from the fluorinated multifunctional alcohol of Claim 3.

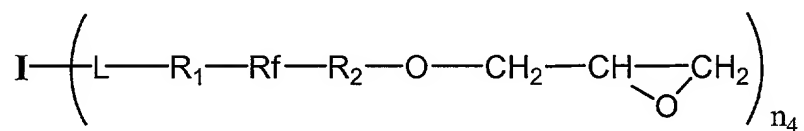
15. The fluorinated multifunctional acrylate of Claim 13 having a number average molecular weight of at least 500.

16. A multifunctional acrylate prepared from the fluorinated multifunctional alcohol of Claim 7.

17. A polymer coating composition containing at least one acrylate of Claim 13.

18. A multifunctional glycidyl ether prepared from the fluorinated multifunctional alcohol of Claim 1.

19. The multifunctional glycidyl ether of Claim 18 having the formula of

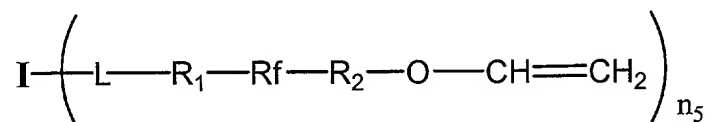


wherein **I** is a multivalent radical; **L** is selected from a group of ether, ester and urethane links; **R**₁ and **R**₂ are monomeric or polymeric divalent radicals such as alkylenediyl, oxyalkylene, alkylene sulfide, arylenediyl, oxyarylene, arylene sulfide, siloxane, and mixtures thereof; **Rf** is a

monomeric or polymeric perfluorinated alkylenediyl, oxyalkylene, arylenediyl, oxyarylene, and mixtures thereof; and n_4 ranges from 3 to 6.

20. A multifunctional vinyl ether prepared from the fluorinated multifunctional alcohol of Claim 1.

21. The multifunctional vinyl ether of Claim 20 having the formula of



wherein **I** is a multivalent radical; **L** is selected from a group of ether, ester and urethane links; R_1 and R_2 are monomeric or polymeric divalent radicals such as alkylenediyl, oxyalkylene, alkylene sulfide, arylenediyl, oxyarylene, arylene sulfide, siloxane, and mixtures thereof; R_f is a monomeric or polymeric perfluorinated alkylenediyl, oxyalkylene, arylenediyl, oxyarylene, and mixtures thereof; and n_5 ranges from 3 to 6.